DOCUMENT RESUME

ED 148 902 TM 006 895

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TITLE	Evaluation and Prediction of Navy Career Counselor Effectiveness. Final Report November 1973-December 1977.
INSTITUTION	Navy Personnel Research and Development Center, San Diego, Calif.
REPORT NO	NPRDC-TR-77-35
PUB DATE	Jun 77
NOTE	46p.
AVAILABLE FROM	National Technical Information Service, Springfield, Virginia (AD-A 042 032)
EDRS PRICE	MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS	Age Differences; Answer Keys; Career Planning; Counseling Effectiveness; Counselor Evaluation; Counselors; *Counselor Selection; Evaluation Criteria; Interest Tests; Interpersonal Competence; *Measurement Techniques; *Military Personnel; *Occupational Guidance; Personality Tests; *Predictive Validity; Rating Scales; Scoring; Test Reliability; Test Validity; *Vocational Aptitude
IDENTIFIERS	Basic Test Battery; Biographical and Attitudinal Inventory; Comrey Personality Scales; Ideal Counselor Adjective Check (Dole); *Navy; Strong Vocational Interest Blank; Tests of Social Intelligence (Guilford)

ABSTRACT

Assessment procedures were developed to identify those naval officers who would be most effective in providing career guidance services to enlisted personnel. Several tests were administered to officers performing career counseling duties. These tests included a cognitive battery, the Navy Basic Test Battery (BTB); as well as the Guilford Tests of Social Intelligence, Comrey Personality Scales (CPS), Strong Vocational Interest Blank, Dole Ideal Counselor Adjective Check List (ICAC), and the Biographical and Attitudinal Inventory (BAI). Counselees' perceptions of the counselors' interpersonal competence were used as the criterion data in constructing scoring keys, which were used in addition to the standard keys for these tests. The relationships of age and cognitive aptitude to effective counseling were also investigated. The counselees generally rated the counseling services favorably, and their evaluations were found to be useful for validation of the selection instruments. Neither counselor pay grade nor BTB aptitude scores were related to job effectiveness, and age was important only to the youngest counselees. The validities of the cognitive battery and the instruments scored with the standard keys ranged from 0 to .20; of the constructed keys, .30 to .60. The best selectors were the CPS, and secondly, the BAI-ICAC composite. (Author/GDC)

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EVALUATION AND PREDICTION OF NAVY CAREER COUNSELOR EFFECTIVENESS

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TM006 895

NPRDC TR 77-35 June 1977

EVALUATION AND PREDICTION OF NAVY CAREER COUNSELOR EFFECTIVENESS

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UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER NPRDC TR 77-35	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) EVALUATION AND PREDICTION OF NAVY CAREER COUNSELOR EFFECTIVENESS		5. TYPE OF REPORT & PERIOD COVERED FINAL REPORT November 1973-December 1977 6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) David W. Robertson Samuel W. Ward Marjorie H. Royle		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Navy Personnel Research and Development Center San Diego, California 92152		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 62763N 521.031.03.02
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE June 1977 13. NUMBER OF PAGES 47
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) UNCLASSIFIED 15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Career Counselor
Counselor Selection
Noncognitive Tests
Guidance

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The Navy's Career Counseling Program assigns senior petty officers knowledgeable in the Navy's training and career programs to assist enlisted personnel in taking advantage of relevant career opportunities. Selection procedures were developed to identify senior petty officers who would be most concerned and effective in providing career guidance service. Criterion data were acquired directly from the counselees who evaluated such counselor behaviors as pleasantness, thoroughness, and interest in the counselee's concerns.

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Noncognitive predictor instruments administered to counselors included the Guilford Tests of Social Intelligence (GTSI), Comrey Personality Scales (CPS), Strong Vocational Interest Blank (SVIB), Dole Ideal Counselor Adjective Check List (ICAC) and a locally developed Biographical and Attitudinal Inventory (BAI). Scoring keys to predict counselor effectiveness were empirically constructed, and standard keys were validated for the GTSI, the CPS, and a cognitive test, the Navy Basic Test Battery (BTB).

Counselees evaluated counselors favorably on pleasantness, concern, and awareness. Younger counselees evaluated counselors in the 32-34 year age range highest, and low aptitude counselees evaluated counselors' helpfulness more highly than did high aptitude counselees. Neither the counselor's seniority level nor BTB scores were related to counselees' evaluations. In cross-validation of the noncognitive predictors, validities for standard keys ranged from near zero to the low 20s, while validities for the empirically constructed keys ranged from near zero to the 40s. For selection ratios ranging from 30 to 70 percent, use of the keys would yield proportionate improvement of from 8 to 26 percent.

Use of the empirically constructed key for the CPS was recommended for Navy Counselor selection. Further validation of the BAI/ICAC composite key was recommended, as was validation of all three keys for use with other jobs involving counseling activities.

FOREWORD

This study was initiated in response to a request from the Chief of Naval Personnel (Pers-B2212, now Pers-5212) to develop selection procedures that identify petty officers who have the potential to provide counseling services to their shipmates.

The Navy Career Counselor rating, which was established in 1973, is one of the Navy ratings that has no requirements for members in the lower grades. The Navy must rely on inputs from other ratings to achieve and maintain required levels. The skills and experiences with which petty officers have demonstrated competence to advance in their occupational specialty may not be related to the necessary skills of effective counseling. Thus, in the absence of relevant data in the records of applicants, the emphasis in this study was to develop measures and selection procedures directly relevant to counseling characteristics. (Another study nearing completion is addressed to the development of selection procedures to identify a general characteristic of interpersonal effectiveness, as a necessary behavioral quality for all Navy ratings that involve providing face-to-face services to shipmates.) The results of this study are considered to be of interest and relevance to other selection requirements for jobs involving counseling activities, particularly that of recruiter.

The substantial and valuable assistance of the following persons is gratefully acknowledged: Mr. David J. Morena, for data processing and computation, and Ms. Hazel F. Schwab, for clerical support.

This study was performed in support of Exploratory Development Task Area ZF55-521.03 (Career and Occupational Design).

J. J. CLARKIN
Commanding Officer

SUMMARY

Problem

Although the Navy's training and career programs are extensively published, it is difficult for an individual, especially one on a first enlistment, to become aware of the many opportunities. Thus, the Navy's Career Counseling Program assigns experienced, knowledgeable senior petty officers to assist personnel in taking advantage of the opportunities relevant to the individual's qualifications. Such service is essential for the Navy to compete with other employers to attract and retain quality personnel.

Purpose

Selection procedures are needed to identify those senior petty officers who will be most concerned and effective in providing career guidance services. Since cognitive tests, such as the Navy Basic Test Battery (BTB), are usually poor predictors of on-job performance or interpersonal skills, a battery of noncognitive instruments was administered to Navy petty officers performing career counselor duties to determine whether counseling effectiveness could be predicted.

Approach

The criterion used in the research was the counselee's perception of the quality of the counselor's immediate interaction with the counselee (as distinguished from an ultimate criterion such as the counselee's reenlistment decision). Thus, criterion data were acquired directly from the counselees who evaluated such counselor behaviors as pleasantness, thoroughness, and manifested interest in the counselee's concerns. The tests administered to counselors were Guilford Tests of Social Intelligence (GTSI), Comrey Personality Scales (CPS), Strong Vocational Interest Blank (SVIB), Dole Ideal Counselor Adjective Check List (ICAC), and a locally developed Biographical and Attitudinal Inventory (BAI). Scoring keys to predict counselor effectiveness were empirically constructed, using the counselee evaluations as the criterion data. Standard keys for the BTB, GTSI, and CPS were also validated. Counselor-counselee dyads were formed by age and BTB score subgroups to determine the relationship of age and cognitive aptitude to effective counseling.

Findings

Generally, counselees evaluated favorably the services of the senior petty officers performing counselor duties, and counselee's evaluations were useful to validate noncognitive selection instruments.

1. The counselees evaluated the counselors quite favorably on such counselor characteristics as pleasantness, understanding, concern, and awareness. Most counselees indicated that the counselor's help enabled them to find out or do considerably more than that which they could have done on their own. Very few counselees, usually less than 10 percent evaluated the counselor's assistance negatively.

2. The counselor's age was most strongly related to the evaluations of the youngest counselees who evaluated 32-34 year age counselors higher than

other younger and older counselors. Neither the counselor's pay grade nor aptitude (Basic Test Battery) scores were related to the effectiveness and thoroughness of the counselor's services. However, low aptitude counselees evaluated the counselor's Helpfulness more highly than did the high aptitude counselees.

3. The validities of cognitive type aptitude tests, such as the subtests of the Navy Basic Test Battery; were near zero. Validities of standard keys of self-assessment instruments varied from near zero to the low 20s. Although low, the validities near .20 were highly significant.

4. The validities of the constructed keys--those which were specially constructed on the present process-type criterion of the counselee's perception of the counselor's awareness and concern (i.e., "warmth")--ranged from the 30s to the 60s. On cross-validation, most of the validities shrank to low or nonsignificant values. Those cross-validities (near .40) that remained significant were higher than the validities of the standard keys.

5. Dependent upon selection ratio, use of the standard or empirically constructed keys would increase the percentage of superior counselors selected. It was demonstrated that, for selection ratios ranging from 30 to 70 percent, use of various empirically validated keys would yield proportionate improvements from 8 to 26 percent.

Conclusions

Criterion data acquired directly from counselees were quite useful to develop counselor selection instruments. The use of noncognitive instruments would increase the percentage of superior counselors selected. Of the constructed keys, the best cross-validated single and multiple selectors were the CPS (r = .34, $p \leq .006$) and BAI-ICAC composite (r = .41, $p \leq .014$) respectively.

Recommendations

It is recommended that:

1. The CPS be used as one of the selectors for career counselors.

2. The BAI and ICAC be administered but not used as selectors (since cross-validation samples for these two multiple selectors were only half that of the CPS), and that all three instruments be revalidated on additional sample data.

3. The usefullness of the three instruments for other jobs involving counseling activities (e.g., recruiter) be investigated.

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INTRODUCTION

Problem and Background

In the present All-Volunteer Force environment, the military services must compete in the labor market with all other employers to attract and retain quality personnel. The attractions that the Navy has to offer are many and varied, including superior technical and academic training, well structured career progressions up through the enlisted and officer ranks, family health and survivor benefits, and a very favorable retirement plan.

The details of these attractions and the eligibility requirements to qualify for them are described extensively in a number of publications and manuals. However, the very extent of the details makes it quite difficult for the individual Navy person, especially one who is on a first enlistment with limited administrative experience, to be fully aware of available opportunities for a particular person's qualifications and circumstances. To assist Navy personnel in taking advantage of these opportunities, the Navy Career Counseling Program was established.

Guidance for administration of counseling services is described in the Navy Career Counseling Manual (NAVPERS 15878-B). Counseling jobs at two levels of activity are described--full-time (command) and part-time (department/division). Assignment to the full-time counseling jobs is controlled by the Bureau of Naval Personnel. Senior petty officers in the occupational specialty (Navy "rating") of Navy Career Counselor (NC) and also in other technical ratings are eligible for consideration for these assignments. Unit and staff commands are encouraged to assign part-time counselor responsibilities to an individual in each division or department.

The tasks of the career counselor, as specified in the Counseling Manual, include the following: (1) organizing and executing the command counseling program, (2) providing counseling services, (3) assessing the professional caliber and career potential of interviewees, (4) assessing feelings and atmosphere at the working level, and initiating suggestions to the managerial level and to the Chief of Naval Personnel to improve retention, (5) providing information to counselees on current and new programs and opportunities, and (6) coordinating efforts with full-time counselors at the command level and part-time counselors at the department/division level.

Thus, an important need appears to exist for the services of a person who is: (1) knowledgeable of the details of programs and benefits, (2) highly skilled in communicating the information most relevant to an individual, and (3) helpful in assisting the individual to take advantage of the opportunities. The skills necessary to provide these services may not be related to the skills in which petty officers have demonstrated competence to advance in their occupational specialty. The problem addressed in the present study concerns how to identify the persons who will be most concerned and effective in terms of the quality of the interactions that take place between the counselor and counselee while the former performs the tasks discussed above.

Present qualifications for entry into full-time counseling jobs specify two objectively measurable criteria--petty officers of at least Grade E-6 (or E-5 serving on at least a second enlistment and eligible to compete for E-6); and no record of disciplinary or personal problems. All other criteria are judgmental, including demonstrated judgment, initiative, and motivation to perform counseling; and effective and persuasive use of the English language, both verbal and written.

Some types of instruments useful and presently available to select candidates for entry or advancement in the counselor rating, in terms of the six counselor tasks listed above, are supervisory evaluations for Tasks 1, 3, 4, and 6, and an objectively scored technical knowledge test on the content of the career opportunity program for Task 5. However, for the very heart of the program, the counseling services in Task 2, the need for empathic sensitivity in the private (one-to-one) counseling relationship is not deemed to be amenable to assessment by supervisors or knowledge tests. Thus, the criterion of special interest in this study is that of the reaction of the counselee to the interaction with the counselor.

Although cognitive tests (e.g., the Navy Basic Test Battery--BTB--have been highly effective in predicting technical school performance (Thomas, 1972), such tests are usually found to be poor predictors of on-job performance (Curtis, 1971). For jobs that include some aspects of interpersonal activities, noncognitive tests have sometimes demonstrated moderate validity with a criterion of training or school performance, but not with on-job performance. For example, the Yeoman Key of the Navy Vocational Interest Inventory (NVII) cross-validated .23 on a criterion of Final School Grade (FSG) for the Navy basic Personnelman "A" school, compared to validities of -.02 for the General Classification Test (GCT) and -.01 for the Arithmetic Test (ARI) (Thomas, 1970). In contrast, on a criterion of job performance 6 months after graduation from the Personnelman school, the NVII YN Key, the Clerical Test (CLER), and some experimental memory tests were not related (Thomas, 1971). GCT and ARI correlated .14 -.19. As predictors, peer ratings, instructor ratings, and FSGs (measures that, of course, would not become available until completion of the Personnelman training) correlated .23 -.35. Thomas (1971) concluded that it appears that, of the tests that are or could be administered prior to school assignment, only the BTB tests currently used in the PN school selection correlated significantly, though not very highly, with on-job performance evaluations.

Purpose

A battery of noncognitive instruments was administered to Navy petty officers performing career counselor duties to determine whether the quality of the counseling interaction could be predicted. Since the lack of good criterion data may have depressed validities in other studies (e.g., Lau & Abrahams, 1970), special effort was directed towards developing and administering counselee-relevant criterion measures.

Questions specifically addressed in the present study are:

1. What is the counselee's reaction to the interaction with the counselor?

2. Are counselor-counselee differences in aptitude, as measured by the GCT and ARI subtests of the BTB, reflected in the counselee's perceptions of the interaction?

3. Does the counselee identify best with a counselor closest to the counselee's own age?

4. Are aptitude, personality, vocational interest, and biographical instruments useful in predicting the counselor's warm, personal concern in the interaction with the counselee?

METHOD

Instrumentation

Criteria

Measures were designed to provide an evaluation of counselor services directly from the recipient of the services--the counselee. Statements that described various aspects of counselor behavior (i.e., pleasantness, manifested interest in counselee's concerns, openness to listening to counselee's questions, thoroughness) were designed for counselee responses on Likert-type 6-point scales. The complete counselee instrument contained a total of 86 items, including some on subjects discussed during counseling, job satisfaction, and occupational interests. Figure 1 displays the 12 criterion items used in the present study, which have been renumbered consecutively from where they were interspersed in the complete instrument.

Each of the statements below applies to this Counselor. Circle the code number which tells the extent of your agreement or disagreement with each statement as it applies to the assistance you received.

Agree Strongly	Agree	Agree Slightly	Disagree Slightly	Disagree	Disagree Strongly	Item #	Abbrev	This Counselor:
6	5	4	3	2	1	1	APRETV	Was very aware and appreciative of my interests or plans.
6	5	4	3	2	1	2	PLESNT	Was very pleasant.
1	2	3	4	5	6	3	NUMBER	Treated me like a number rather than a person.
6	5	4	3	2	1	4	UNDFLT	Understood how I felt.
6	5	4	3	2	1	5	CMFKBL	Made me feel comfortable and at ease.
6	5	4	3	2	1	6	ASKQST	Gave me plenty of opportunities to ask questions.
6	5	4	3	2	1	7	CONCRN	Acted as if my concerns were important.
6	5	4	3	2	1	8	PRBSLV	Was thorough and effectively solved my problem or provided the desired service.
6	5	4	3	2	1	9	HLPPRB	Helped me to see clearly what I had to do to take care of my problem

Compared to what you think you could have found out or done through your own efforts, how much help do you think this Counselor was.

A great deal more	Considerably more	Somewhat more	About the same	Somewhat less	A great deal less	Not applicable	Item #	Abbrev	This Counselor was helpful in:
6	5	4	3	2	1	-	10	INFRMG	Informing you of Navy programs and benefits of advantage to you.
6	5	4	3	2	1	-	11	BENFIT	Working out the ways for you to take action in order to take advantage of any Navy programs or benefits.
6	5	4	3	2	1	-	12	PRSPRB	Working out a solution to a personal problem or obstacle.

Figure 1. Criterion items from counselee's evaluation of counselor.

Predictors

The batteries of tests and inventories that were evaluated are described briefly below.

1. The Navy Basic Test Battery (BTB) of aptitude tests--usually administered to new recruits, and used primarily to select students for basic technical training.

a. General Classification Test (GCT)--Verbal analogy and sentence completion (100 items).

b. Arithmetic Test (ARI)--Arithmetic computation (20 items) and reasoning (30 items).

c. Mechanical Test (MECH)--Tool knowledge and mechanical comprehension (50 items).

d. Clerical Test (CLER)--Highly speeded number-matching for the ability to observe quickly and accurately (210 items).

e. Sonar Pitch Memory Test (SONAR)--Recorded auditory signals for the ability to discriminate small pitch differences (40 items).

f. Radio Code Aptitude Test (RADIO)--Recorded Morse Code (150 items).

g. Electronics Technician Selection Test (ETST)--Measures of achievement and knowledge related to electronic maintenance, including mathematics, science, shop practice, electricity, and radio (80 items).

2. Guilford Tests of Social Intelligence (GTSI)--Only three of the available six subtests were used.

a. Missing Pictures--Interpretation of social interactions (depicted by a sequence of photographs) by selection of one of three alternative photographs that completes the sequence (20 items).

b. Cartoon Predictions--Interpretation of intentions or feelings from facial expressions, body postures, and situational circumstances depicted by cartoon characters (30 items).

c. Social Translations--Detection of subtle differences in verbal communications that imply different intentions or meanings (24 items).

3. Comrey Personality Scales (CPS)--Measures of frequency of participation or intensity of feelings in specified events, experiences, situations, or outlooks (180 items). Scoring keys have been developed to measure eight bipolar traits plus validity and response bias. The first terms of each trait, as used in this study as titles, are trust, orderliness, conformity, activity, stability, extroversion, masculinity, and empathy.

4. Strong Vocational Interest Blank (SVIB)--A self-report inventory of academic, occupational, recreational, and athletic interests (399 items). Scoring keys have been developed for a great number of occupations and for a moderate number of traits.

5. Ideal Counselor Adjective Check List (ICAC)--An inventory of 215 adjectives developed by Dole (1964) (43 items). The instructions were modified slightly to accommodate the electronically scannable Optical Mark Reader (OMR) response sheets used in the present duty.

6. Biographical and Attitudinal Inventory (BAI)--A self-report inventory containing biographical items of the type advocated by Owens (1976), including items about high school experiences and social and family activities;[1] and also containing attitudinal items developed locally (120 items).

Sampling Procedure

Counselors were middle and senior grade enlisted petty officers who were assigned counseling duties on either a full- or part-time basis. Sets of questionnaires to be completed by counselees (the criterion instrument) were forwarded via the unit command to the counselors, with instructions that requested the counselor to issue a counselee questionnaire letter to the next consecutive eight counselees interviewed by a full-time counselor or the next six by a part-time counselor. Counselees were requested to complete the questionnaire within 48 hours after the interview and mail it directly to this research center (in a preaddressed envelope provided).

Counselees were generally in the junior pay grades, on a first enlistment for which a series of orientation and progress interviews is specified.

After a few months had elapsed, while counselee questionnaires were received, the predictor instruments 2 through 6 described above were forwarded to all counselors for whom counselee responses had been received.[2]

The final number of usable instruments available was as follows: (1) for scoring key validation, 311 counselor sets (i.e., with 6 predictor instruments and at least 3 counselee evaluations per counselor) (see Table 1); and (2) for item intercorrelations and counselor-counselee relationships, 2,075 counselee evaluation sets. To develop realistic and stable criteria for key validation, the data were acquired (1) directly from the counselee (vice the counselor's supervisor), and (2) from more than one counselee per counselor. The number of counselee evaluations per counselor ranged from 126 counselors with one evaluation each, to one counselor with 11 evaluations (see Table 2).

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[1]These items were taken from an unpublished inventory, "Booklet B, Autobiographical Data," developed by Owens (Note 1).

[2]Scores for the Navy BTB subtests were already available from the Enlisted Master Tape file.

Table 1

Navy Career Counselor and Counselee
Instrumentation and Sample Sizes

Type Counselor	Counselor Predictor Packets			Counselee Criterion Packets		
	Administered	Returned[a] and Usable		Administered[b]	Returned[c] and Usable	
	N	N	%	N	N	%
Full-Time	412	224	54	2800	1514	54
Part-Time	240	87	36	1200	561	47
Total	652	311	48	4000	2075	52

[a]Of 406 returned, 95 were incomplete and not used.

[b]Estimated from a Counselor's log of interviews which was submitted by the Counselor.

[c]Of 2365 returned, 290 were incomplete, or particularly, could not be matched to a Counselor and were not used.

Table 2

Distribution of Counselees Per Matched Counselor

N Counselees Identified with a Counselor	N Counselors[a] Matched with Counselees	Total Counselees
11	1	11
9	2	18
8	21	168
7	33	231
6	46	276
5	58	290
4	76	304
3	89	267
2	150	300
1	126	126
Total	602	1991

[a]Full and part-time Counselors combined.

Analysis of Counselee Evaluation Items

The scale points on the Likert-type scales were weighted from 6 (most favorable) to 1 (least favorable).[3] Means, standard deviations, percentage endorsements, and intercorrelations were calculated for the total group of counselees responding to each of the 12 individual criterion items.

Construction of Criterion Variables

The three kinds of counselor behavior of interest were the counselor's: (1) demonstration of personal concern ("warmth") in interaction with the counselee, (2) effectiveness (as perceived by the counselee) at assisting the counselee in solving problems specific to the interview, and (3) demonstration of overall helpfulness (again as perceived by the counselee). The 12 counselee evaluation items were rationally grouped, by homogeneity of content as determined by multiple judges, to form three separate criterion variables as follows: Warmth (Items 1-7), Problem-solving Effectiveness (Item 8), and Helpfulness (Items 9-12). The criterion score (on each item set) for each counselor was formed by first calculating an individual counselee average for each item set, and then calculating an average from all counselees evaluating the particular counselor (i.e., the averages of the multiple evaluations on each item set were used as the criterion scores for each counselor). The analyses performed with each of the criterion scores are described below.

Interrater Agreement Among Counselees

To measure interrater agreement among the stochastically independent counselee evaluations, the Intraclass Correlation Coeficient (ρ_I) was calculated employing the formula for the case of unequal class membership (Haggard, 1958, although Haggard employs the symbol R for the coefficient). The levels of significance of the obtained coefficients were tested by the same F-ratio which was computed from the same mean squares, with the appropriate df, as were used to obtain the coefficient (Haggard, 1958). Various groupings of counselees per counselor were investigated for two of the three criterion items: (1) for the single-item Problem-solving Effectiveness set--two or three, at least four, and at least two counselees per counselor; and (2) for the average of the 7-item Warmth set--at least two and at least three counselees per counselor.

Counselor-Counselee Aptitude Differences

An analysis of variance (ANOVA) design was used to identify differences in the above three criterion variables related to counselor-counselee differences in aptitude, as measured by the GCT and ARI subtests of the BTB. Counselor-counselee aptitude dyads were formed by subgrouping counselors into four subgroups by the sum of the GCT+ARI scores, 56-99, 100-110, 111-120, and 121 and above, and counselees by four similar subgroups. Thus,

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[3]As shown in Figure 1, the weights were reversed for Item 3.

16 subgroups were formed, with each of the four aptitude groups of counselees evaluating four aptitude groups of counselors. Three types of analyses were performed on the above 4 x 4 matrix using the Warmth, Problem-solving Effectiveness, and Helpfulness criteria as dependent variables. A two-way ANOVA was performed on counselor-counselee BTB score effects and interaction; and a one-way ANOVA, on counselor BTB effects for each level of counselee BTB. A posteriori comparisons of pairs of means were performed using Duncan's Multiple Range Tests (Overall & Spiegel, 1969). An a priori t test was performed on three selected pairs of means (i.e., the maximum number of pairs allowed to minimize chance results--see Kirk, 1968). Also, in a simpler analysis, counselor and counselee GCT+ARI scores were simply dichotomized at a score of 100, and counselee evaluations then compared on the three criteria.

Counselor-Counselee Age Differences

To determine whether the counselee identifies best with a counselor closest to the counselee's own age, counselor-counselee age dyads were formed by subgrouping counselors into four age groups--21-31, 32-34, 35-37, and 38 and above; and counselees, 17-19, 20-21, 22-23, and 24 and above. Again, 16 subgroups were formed, with each of the four age groups of counselees evaluating four age groups of counselors (i.e., counselee age group 17-19 evaluating counselor age groups 21-31, 32-34, 35-37, and 38 and above; counselee age group 20-21 evaluating other independent counselor groups of above age ranges; etc.). Employing the three criteria, the same three types of analyses were performed as were described above for the BTB score dyads--two-way and one-way ANOVA, and a priori comparisions of three selected pairs of means.

Validation of Counselor Predictors

The demonstration of a warm, personal concern by the counselor appears to be a voluntary, discretionary form of behavior that is least amenable (1) to supervisory monitoring during a one-to-one type counseling interaction, and (2) to prediction by objective testing. Thus, the primary emphasis of this study was to evaluate the usefulness of the predictors to select candidates who would demonstrate this warmth while performing the counseling services.

Employing the Warmth criterion, the total group of usable counselors (i.e., for which evaluations were available from at least three counselees) was used for an independent validation of the standard scores for predictor instruments 1, 2 and 3 described above--7 subtests of the BTB, 3 subtests of the GTSI, and 10 keys of the CPS test.

Situationally unique scoring keys were empirically derived for predictors 2-6, using two-thirds of the available counselor group for key construction (KEYCON) and the other third as a holdout group for cross-validation.

High and low criterion groups were formed by splitting the total counselor group at the median of the criterion score. To provide a meaningful multiple regression analysis when various combinations of predictors were tested, as described below, the same criterion groups and validation groups were used

for all predictors. (As an alternative, the random assignment of subjects to the KEYCON or holdout groups could have been performed separately and repeatedly for the construction of each scale, so that different subjects could have been randomly selected for holdout groups for different predictors.)

Keys were constructed for GTSI, SVIB, ICAC, and BAI by selecting the item alternatives (e.g., for the 3 alternatives of each item of the SVIB, a total of 1,197 alternatives were tested) for which there was at least an 8 percent difference in responses between the high and low criterion groups. Selected alternatives were weighted by each increment of eight percentage points difference (e.g., a weight of 2 for at least 16 percent difference, and 3 for 24 percent difference).

For the CPS, a different, novel key construction procedure was employed. Since the Likert-type 7-point CPS scale was longer than those of the other predictors (e.g., 3-point for SVIB, 5-point for ICAC), the proportions of endorsements distributed among the alternatives were relatively small and thus unstable. Also, it is assumed, for the standard key construction procedure, that alternatives are categorical. Thus, the procedure does not take advantage of the additional information available in the ordinal scale of the CPS. As an alternative, a Tilton Percentage Overlap statistic (Tilton, 1937) between the high and low criterion groups was calculated for the distribution of responses across all alternatives of each item. The items (as distinguished from alternatives) with at least an 8 percent non-overlap were selected for the scoring key (and incrementally weighted as described above).

After high and low criterion groups of the key construction and cross-validation groups were scored by each key, means, standard deviations, point biserial coefficients, and Tilton Percentage Overlap were calculated. Stepwise multiple regression analyses were performed for various combinations of predictors. The intercorrelation matrices for multiple regression equations from the same sample on which key construction has been performed contain validities that are differentially inflated due to the mix of standard and constructed keys, length of tests, and number of alternatives. Thus, the regression equations may yield regression weights or factors that are not optimal for other samples (Abrahams & Alf, 1972). A preferred procedure, the use of an additional sample for development of the regression equations, was not feasible for this study due to small sample sizes. In addition to multiple regressions on all variables, multiple regressions on pairs of variables were performed and the pair with the highest cross-validation coefficient was selected. (A further cross-validation of these tests and regression weights on another sample would be appropriate.)

The distribution of scores obtained from cross-validation of the constructed CPS key was used to construct individual expectancy charts (Guion, 1965; Lawshe, Bolda, Brune, & Auclair, 1958) that predict the probability of an applicant performing as a superior Navy career counselor.

RESULTS

Counselee Evaluations of Counselor

Generally, counselees evaluated the services provided by the counselor very favorably. For the 6-point Likert-type scale employed, the modal response to each of the 12 criterion items was found to be located at one of the top two scale points (see Table 3).[4] The means of the weighted responses ranged from 4.276 (Item 12--Solution to Personal Problems) to 5.499 (Item 2--Pleasantness) (see Table 4). Generally, counselors were evaluated higher on the Warmth set (Items 1-7) than on Helpfulness (Items 9-12). Most counselees indicated that the counselor's help was considerably more than that which the counselee could have done. Very few counselees, usually less than 10 percent, evaluated the counselor's assistance negatively.

The intercorrelations among the criterion items ranged from .138 to .663 (see Table 4). The intercorrelation patterns do not clearly reflect the groupings (into the three criterion sets) rationally determined by homogeneity of content, possibly as a result of the negative orientation of Item 3, and the different scale design of Items 10 through 12. Interrater agreement among the counselees evaluating each counselor was rather low, but highly significant (see Table 5, e.g., for the 7-item Warmth criterion, using all evaluations for three or more counselees per counselor, $\rho_I = .13$, $p \leq .001$).

Counselor-Counselee Aptitude Differences and Counselee Evaluations

In the comparison of the counselor-counselee BTB (GCT+ARI) dyads on the Helpfulness criterion, no significant differences were identified among the counselor groups (see Table 6 and Figure 2), but some differences were identified among counselee groups. Generally, the low BTB counselees evaluated the counselor's Helpfulness more highly than did the high BTB counselees (counselee main effect, $p \leq .002$).

In the comparision of high and low BTB counselees on two different criterion items (see Figures 3 and 4), the high BTB counselees evaluated counselors higher on Warmth ($p \leq .023$), but lower on Helpfulness ($p \leq .002$), than did the low BTB counselees. Differences among BTB subgroups for the Problem-solving Effectiveness criterion (Item 8) were very slight and nonsignificant.

Counselor-Counselee Age Differences and Counselee Evaluations

For the Problem-solving Effectiveness criterion (Item 8), the counselor's age was found to be related most strongly to the evaluations of the youngest counselees, age 17-19 (see Tables 7 and 8, and Figure 5). (Table 8 and the left-hand side of Table 7 present the ANOVA results, while the right-hand side of Table 7 presents the results of the differences between a priori selected pairs of means.) The youngest counselees evaluated the youngest

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[4]Because of the large number of tables and figures and relatively small amount of text appearing in this section, the tables and figures are provided at the end of the section, in the order that they are referred to in text.

counselors (age 21-31) the lowest; and the age 32-34 counselors, the highest (a posteriori $p \leq .05$, a priori $p \leq .01$). The evaluations of the youngest counselees (age 17-19) tended to be curvilinear (see Figure 5) with the highest evaluations for the counselor groups in the middle of the age range; and the evaluations of the oldest counselees (age 24 or higher), relatively flat. However, in the two-way ANOVA, the differences in evaluations among the counselee age groups, across the counselor age groups, were not significant (see footnote of Table 7, i.e., for interaction effects, $p \leq .381$). Thus, the differences in slope of the lines among the counselee age groups were not significant, although the differences among the counselor age groups for the combined evaluations of all the counselee age groups, were significant (i.e., $p \leq .001$ for main effects by counselor age groups).

For the Helpfulness criterion, differences in evaluations among counselor age groups were significant in the two-way ANOVA ($p \leq .036$), with the youngest counselors evaluated the lowest and those in the 32-34 age range, the highest. Counselee age differences and interaction effects were not significant for the Helpfulness criterion.

For the Warmth criterion, no differences in the two-way ANOVA were significant.

Key Construction and Validation

The validity coefficients of the keys which were empirically constructed from the criterion of primary interest, Warmth, were found to range from .38 for CPS to .66 for SVIB (see Table 9). On cross-validation, with the typical shrinkage of the validity coefficients, only the CPS key remained significant ($r = .34$, $p \leq .05$). The independent validation (on the total group of counselors) of various standard keys yielded validities (see Table 10) ranging from -.11 (Masculinity-CPS) to .22 (Activity-CPS). Generally, the validities of the cognitive test (e.g., BTB) were near zero, and the noncognitive were between zero and the 20s. Employing various combinations of cognitive and noncognitive tests as multiple predictors (see Table 11), the BAI and ICAC yielded a cross-validity of .41 ($p \leq .01$), which, with the addition of the CPS-constructed key, dropped to .39 ($p \leq .02$).

Table 3

Distribution of Counselee Responses to Criterion Items

Item No.	Abbrev.	Percentage Endorsement[a] Scale Weights 6	5	4	3	2	1	Total N Responses
1	APRETV	32	47	15	4	2	-	2046
2	PLESNT	58	37	4	-	-	-	2046
3	NUMBER[b]	58	30	4	3	3	2	2035
4	UNDFLT	21	51	20	5	2	1	2040
5	CMFRBL	45	43	10	2	1	-	2048
6	ASKQST	56	36	6	1	-	-	2041
7	CONCRN	38	46	12	3	1	1	2036
8	PRBSLV	28	44	18	6	3	1	2031
9	HLPPRB	30	45	18	5	2	1	2026
10	INFRMG	36	33	22	7	1	1	1941
11	BENFIT	29	38	23	8	1	1	1933
12	PRSPRB	18	28	25	21	5	2	1397

[a]Due to rounding, percentages do not necessarily sum to 100.

[b]Note that scale weights were reversed for this item--see Figure 1.

Table 4

Distribution Statistics and Intercorrelations Among Criterion Items

Item No.	Item Abbrev.	N	1 APRETV	2 PLESNT	3 NUMBER	4 UNDFLT	5 CMFRBL	6 ASKQST	7 CONCRN	8 PRBSLV	9 HLPPRB	10 INFRMG	11 BENFIT	12 PRSPRB
1	APRETV	2046		417	262	542	422	374	508	483	468	308	361	360
2	PLESNT	2046			347	375	494	464	431	388	334	265	312	285
3	NUMBER	2035				234	284	332	327	299	246	182	206	138
4	UNDFLT	2040					500	399	510	478	519	279	330	390
5	CMFRBL	2048						506	505	426	408	270	334	322
6	ASKQST	2041							588	440	434	308	333	294
7	CONCRN	2036								518	545	352	399	362
8	PRBSLV	2031									605	339	402	435
9	HLPPRB	2026										346	375	432
10	INFRMG	1941											663	487
11	BENFIT	1933												510
12	PRSPRB	1397												
	Mean		5.024	5.499	5.300	4.808	5.292	5.446	5.151	4.850	4.924	4.935	4.815	4.276
	Standard Deviation		.926	.692	1.121	.962	.800	.738	.881	1.058	.995	1.036	1.042	1.247

Note. Decimal points for correlations have been omitted. See Figure 1 for description of items.

Table 5

Interrater Agreement of Counselees' Evaluations
Of Counselors for Two Criteria

Criterion	Item No. Source	N of Counselee Evaluations per Counselor	N of Intraclass Groups of Counselors	Intraclass Coefficient[a] ρ_I	$p \leq$
Problem-solving Effectiveness	8	2 or 3	239	.02	NS
	8	≥ 4	237	.18	.001
	8	≥ 2	476	.23	.001
Warmth	$\bar{X}$ of 1-7	≥ 2	472	.13	.001
	$\bar{X}$ of 1-7	≥ 3	326	.13	.001

[a]Formula for unequal class membership (Haggard, 1958: Formula 5).

Table 6

Means and Standard Deviations of Counselor Helpfulness
By Counselor-Counselee GCT+ARI Dyads

Counselor GCT+ARI Subgroup		Counselee Evaluation of Counselor Helpfulness[a]						A Priori Significance Test		
		Counselee GCT+ARI Subgroups						t		
		56-99 I	100-110 II	111-120 III	121-up IV	Total	Overall F	I & II	I & III	I & IV
56-99	$\bar{X}$	4.903	4.896	4.667	4.594	4.780				
	SD	.775	.717	1.045	.929	.874	2.344	.046	1.586	2.166
	N	95	65	69	61	290	$p \leq .08$	NS	NS	$p \leq .05$
100-110	$\bar{X}$	4.738	4.702	4.636	4.637	4.680				
	SD	.904	.873	.784	.765	.832	.203	.227	.652	.63
	N	61	52	55	51	219	NS	NS	NS	NS
111-120	$\bar{X}$	4.870	4.741	4.800	4.645	4.756				
	SD	.749	.732	.908	.778	.793	.886	.854	.463	.563
	N	54	56	55	69	234	NS	NS	NS	NS
121-up	$\bar{X}$	5.043	4.731	4.819	4.536	4.765				
	SD	.713	.849	.845	.770	.812	4.207	2.014	1.478	3.498
	N	53	53	58	70	234	$p \leq .01$	$p \leq .05$	NS	$p \leq .01$
Total	$\bar{X}$	4.89	4.78	4.73	4.60	4.75				
	SD						5.296			
	N	263	226	237	251	977	$p \leq .01$			

Note. Two-way ANOVA

	F	$p \leq$	df
Main Effects	2.986	.007	6
Counselor BTB	.744	.999	3
Counselee BTB	5.296	.002	3
Interaction	.739	.999	9

[a]Criterion is mean of 4-item Helpfulness set--see Figure 1.

NS - Not significant.

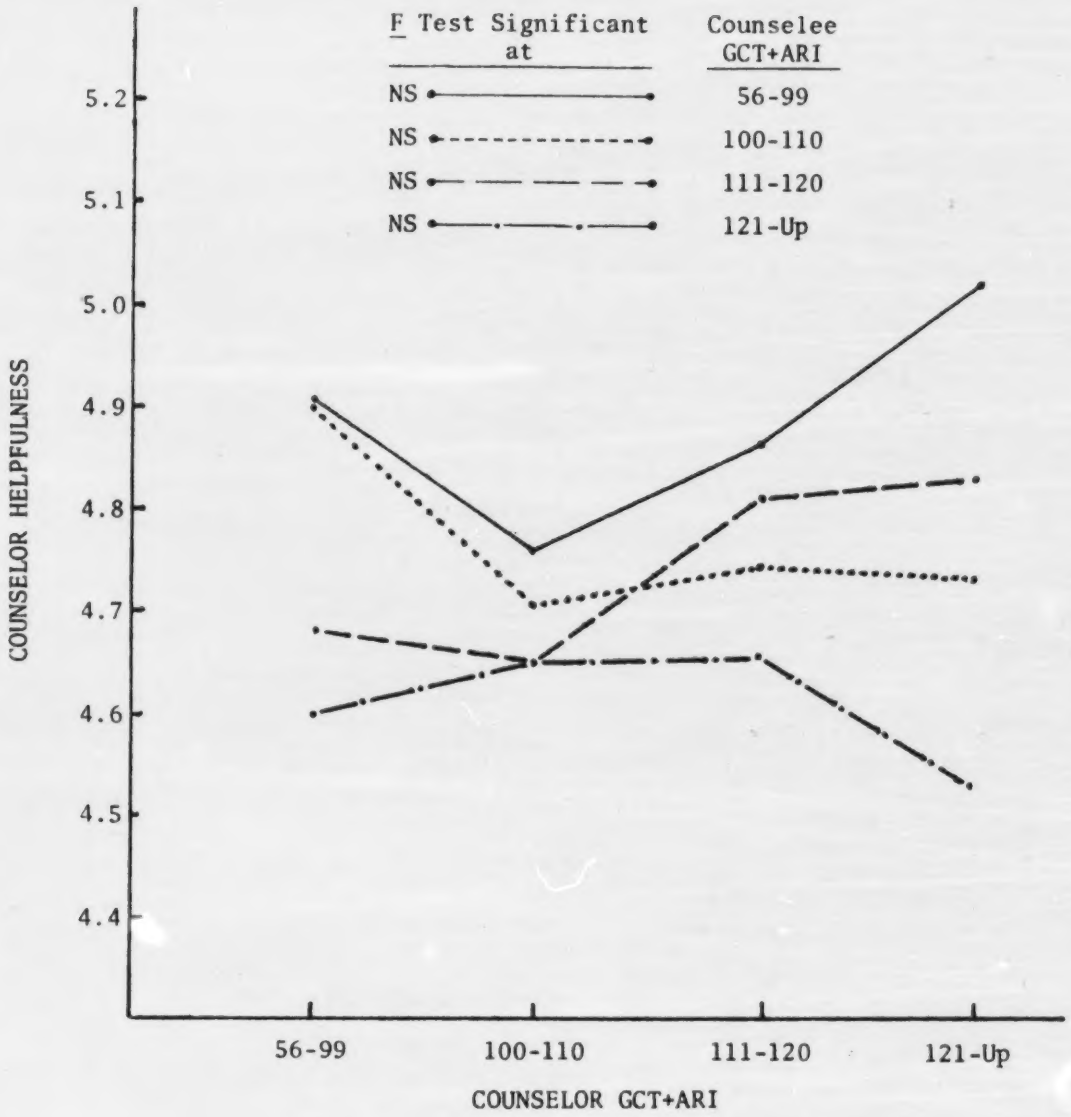

Figure 2. Counselor Helpfulness by counselor-counselee GCT+ARI score group dyads.

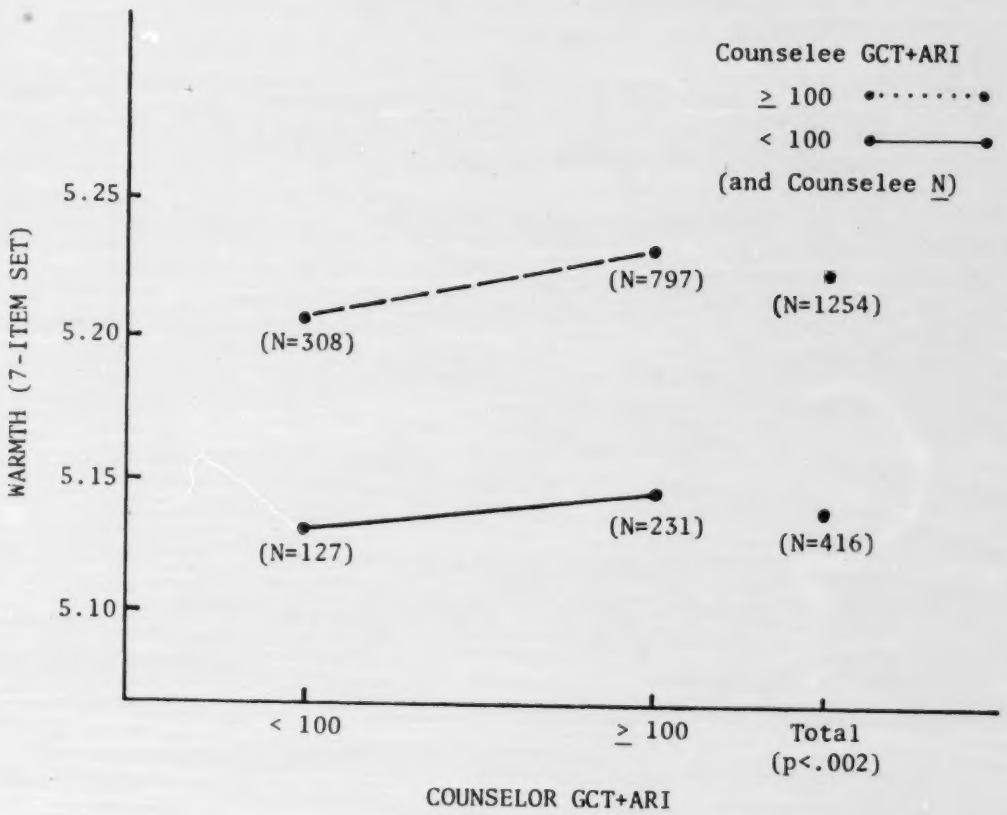

Figure 3. Counselee evaluation of Counselor's manifested thoughtful concern--Warmth--by Basic Test Battery (GCT+ARI) score dyads. (Total Ns are greater than sum of dyad Ns because some counselor BTB scores were not available to form the dyads.)

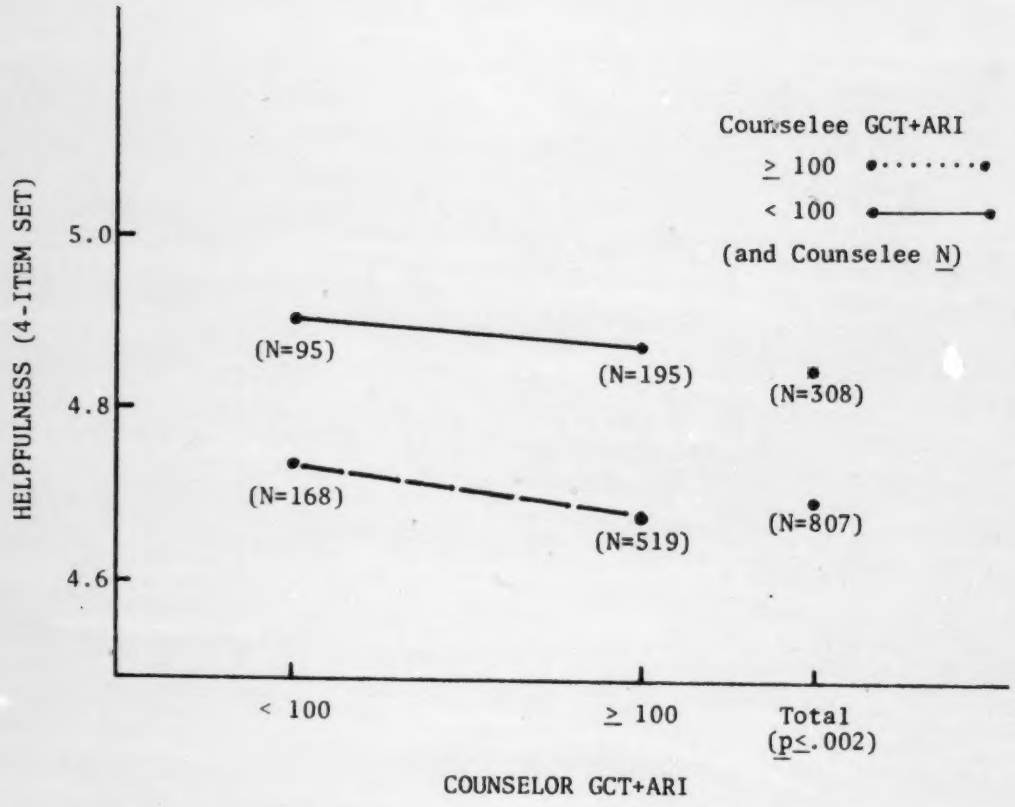

Figure 4. Counselee evaluations of Counselor's Helpfulness by Basic Test Battery (GCT+ARI) score dyads. (Total Ns are greater than sum of dyad Ns because some counselor BTB scores were not available to form the dyads.)

Table 7

Means and Standard Deviations of Counselor Problem-Solving Effectiveness Stratified by Counselor-Counselee Dyadic Age Groups

Counselee Age Subgroup		Counselee Evaluation of Counselor Effectiveness[a]						A Priori Significance Test		
		Counselor Age Subgroups						t		
		21-31 I	32-34 II	35-37 III	38-Up IV	Total	Overall F	I & II	I & III	I & IV
17-19	$\bar{X}$	4.488	5.025	4.711	4.832	4.732	4.264	-3.43	-1.51	-2.31
	SD	1.140	.987	1.145	1.048	1.104	$p \leq .01$	$p \leq .01$	NS	$p \leq .03$
	N	125	79	97	95	396				
20-21	$\bar{X}$	4.820	5.054	4.764	4.864	4.866	2.007	-1.92	.49	-.37
	SD	1.064	.909	1.154	1.026	1.052	NS	$p \leq .06$	NS	NS
	N	172	130	161	140	603				
22-23	$\bar{X}$	4.706	5.030	4.916	4.868	4.867	2.076	-2.39	-1.68	-1.25
	SD	1.119	.839	1.031	1.077	1.037	NS	$p \leq .02$	$p \leq .10$	NS
	N	143	99	131	114	487				
24-Up	$\bar{X}$	4.939	5.060	4.953	4.787	4.939	1.133	-.83	-.10	1.02
	SD	1.013	.983	.930	1.172	1.023	NS	NS	NS	NS
	N	98	100	106	89	393				
Total	$\bar{X}$	4.742	5.043	4.833	4.849	4.853	6.709	-4.63	-1.42	-1.61
	SD	1.107	.928	1.079	1.062	1.055	$p \leq .01$	$p \leq .01$	NS	NS
	N[b]	562	423	510	457	1952				

Note. Two-way ANOVA

	F	p≤	df
Main Effects	4.595	.001	6
Counselee Age	2.304	.074	3
Counselor Age	6.506	.001	3
Interaction	1.071	.381	9

[a] Criterion Item 8--see Figure 1.

[b] N's are greater for total than subgroups since no cases were deleted due to missing age data.

Table 8

A Posteriori Significance Test of Counselor Problem-Solving Effectiveness by Counselor-Counselee Age Dyads

C'ee Age Group		C'or Age Group 21-31 I	32-34 II	35-37 III	38-Up IV
I 17-19		I	.05	NS	.05
		II		NS	NS
		III			NS
II 20-21		I	NS	NS	NS
		II		.05	NS
		III			NS
III 22-23		I	.05	NS	NS
		II		NS	NS
		III			NS
IV 24-Up		I	NS	NS	NS
		II		NS	NS
		III			NS

Note. C'ee--Counselee, C'or--Counselor. Effectiveness by criterion item 8--see Figure 1.

NS - Not significant.

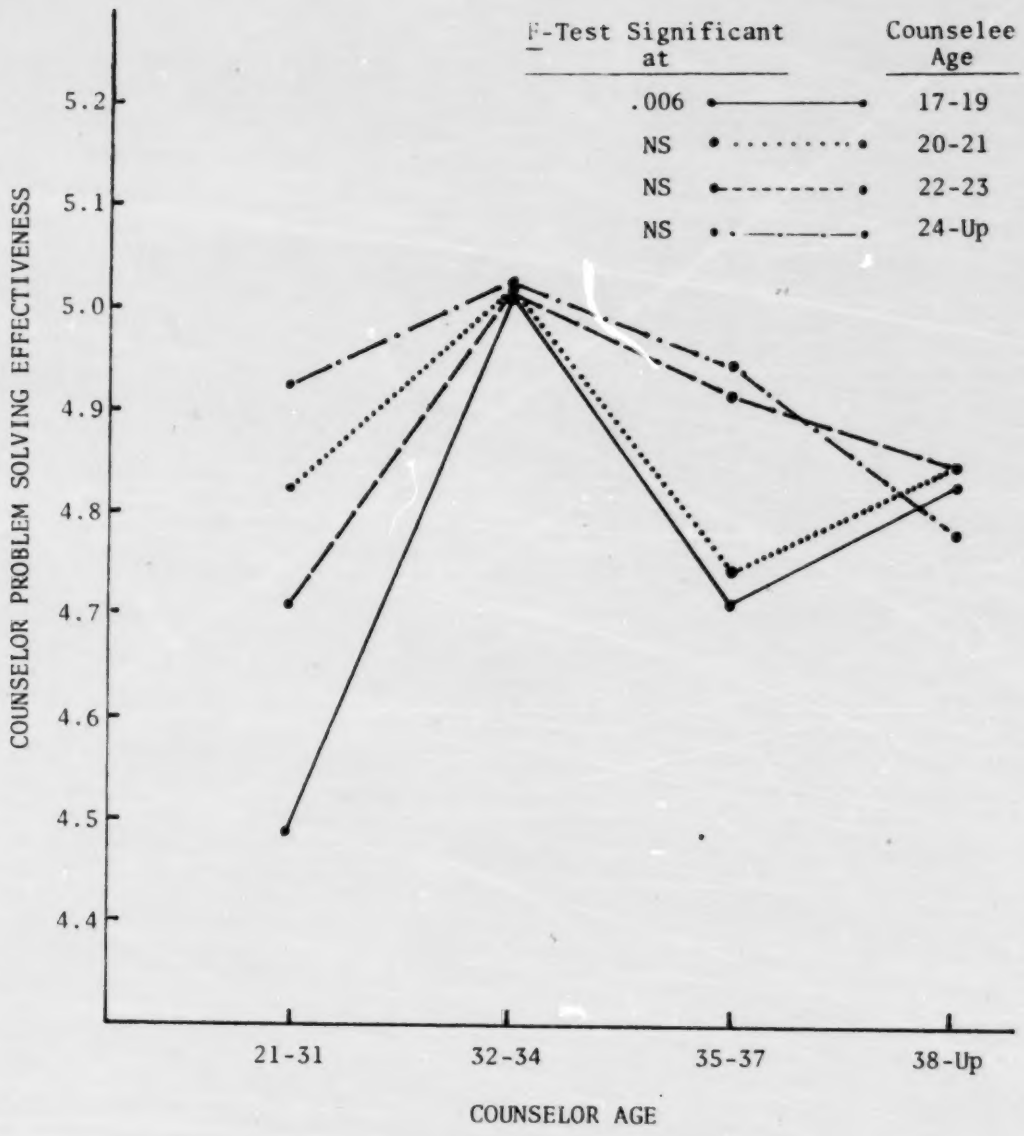

Figure 5. Counselor problem-solving effectiveness by counselor-counselee age group dyads.

Table 9

Validities of Five Constructed Keys

Scale and NSA/NTA Item Alternates[a]	Sub-Group[b]	Criterion Group[c] High N	High $\bar{X}$	High SD	Low N	Low $\bar{X}$	Low SD	Validity r	Tilton % Overlap	Significance Test[d] For Cross Validation Sample t	p≤
GTSI	KEYCON	76	3.42	3.43	93	-0.25	3.58	.42	60.06		
27/222	X-VAL	42	1.81	3.53	31	1.61	3.50	.01	97.77	.24	NS
CPS	KEYCON	77	129.86	19.87	93	108.85	23.58	.38	62.87		
174/1260	X-VAL	41	125.46	21.67	30	114.97	19.70	.34	79.97	2.09	.05
SVIB	KEYCON	78	13.50	12.25	93	-18.35	12.60	.66	19.99		
263/1197	X-VAL	40	-2.07	16.29	30	-1.50	13.25	-.21	101.55	-.16	NS
BAI	KEYCON	77	15.88	7.13	93	3.06	8.38	.55	40.85		
107/720	X-VAL	42	8.71	7.88	31	7.94	8.69	.20	96.25	.40	NS
ICAC	KEYCON	41	3.88	3.70	59	-2.98	3.86	.49	36.37		
47/258	X-VAL	18	-0.22	4.39	18	-0.22	5.16	.24	100.00	0	NS

[a]Scales: GTSI--Guilford Tests of Social Intelligence (three subtests)
CPS--Comrey Personality Scales
SVIB--Strong Vocational Interest Blank
BAI--Biographical and Attitudinal Inventory
ICAC--Ideal Counselor Adjective Check List

NSA--The number of item response alternatives selected to construct the key from the total number, NTA, of alternatives.

[b]KEYCON--Key construction: Two-thirds of each criterion group used to construct the key.

[c]Criterion measure is counselee evaluation from 7-item Warmth set. High and low criterion groups were formed by splitting the total counselor group at the median of the criterion measure. However, the sizes of the high and low groups are not always equal, since (1) the distribution of criterion scores varied slightly between the key construction and cross-validation groups, and (2) some predictor scores were missing for some counselors.

[d]Due to the small sample size of the cross-validation groups, the one-tail mean-difference null hypothesis of high group no greater than low group was employed as more conservative than the two-tail test of $r = 0$.

Table 10

Cross-Validities of Constructed and Standard Keys

Scale	N[a]	r[b]	p≤[c]	Scale	N[a]	r[b]	p≤[c]
Constructed Keys				Standard Keys (con't)			
GTSI	73	.01	NS	CPS			
CPS	71	.34	.05	Stability	231	.18	.008
SVIB	70	-.21	NS	Extraversion	231	.18	.008
BAI	73	.20	NS	Masculinity	231	-.11	NS
ICAC	36	.24	NS	Empathy	231	.17	.008
Standard Keys				Response Bias	231	.00	NS
GTSI				Basic Test Battery			
Missing Pictures	242	.10	NS	GCT	292	.03	NS
Cartoon Predictions	238	.05	NS	ARI	291	.08	NS
Social Translations	236	.03	NS	MECH	291	.08	NS
CPS				CLER	291	.01	NS
Trust	231	.08	NS	SONAR	112	.01	NS
Orderliness	231	-.01	NS	RADIO	141	.12	NS
Conformity	231	.12	.070	ETST	127	.03	NS
Activity	231	.22	.002				
Validity	231	.18	.006				

[a]For constructed keys, N represents the one-third holdout group; for standard keys, the total sample.

[b]Criterion measure is counselee evaluation from 7-item Warmth set.

[c]Null hypothesis tested for standard keys, for which the total sample was available, was two-tail r = 0; and for constructed keys, one-tail (see Table 9).

Table 11

Multiple-Regression Analysis and Empirical Cross-Validation of Counselor Predictors

Predictor		Regression Analysis[b]					Empirical Cross-Validity[c]	
Abbreviation[a]	Accretion of nth Variable	R	SE	df	F	p≤	r	p≤[e]
CPS (Con)	1st	.38	31.00	1,168	28.21	.01	.34	.006
BAI (Con)	1st	.55	28.14	1, 40	17.47	.01		
ICAC (Con)	2nd	.62	26.68	2, 39	12.47	.01	.41	.014
BAI (Con)	1st	.55	27.93	1, 98	42.81	.01		
ICAC (Con)	2nd	.62	26.28	2, 97	31.01	.01		
CPS (Con)	3rd	.63	26.35	3, 96	20.73	.01	.39	.022
RADIO (Std)	1st	.21	32.79	1, 64	3.08	NS		
SONAR (Std)	2nd	.30	32.32	2, 63	3.04	NS		
CPS (Std)	3rd	.36	31.87	3, 62	3.01	.05		
OCCUP[d] (Con)	4th	.41	31.43	4, 61	3.00	.05	.34	.126

[a]Con--Constructed Key, Std--Standard Key.

[b]Criterion is 7-item Warmth set.

[c]Based on separate one-third holdout group.

[d]OCCUP--a categorical variable which identified the counselor's prior technical specialty in one of four occupational areas--administrative, operator, mechanic, or all-other.

[e]Null hypothesis tested was two-tail $r = 0$.

DISCUSSION

Interrater Agreement Among Counselees

It was reasonably expected that interrater agreement would not be high, since the counseling sessions are conducted on a wide variety of discussion topics (e.g., promotion, training qualifications, personal problems, etc.) and under a wide range of environmental conditions (e.g., at sea vs. in port). Because of the reality of the variety of these kinds of situations, it was deemed appropriate and essential to employ a criterion from several counselees who evaluated the counselor under these various conditions.

Counselor-Counselee Aptitude and Age Differences

It was also expected that counselees would identify most closely with the counselors nearest their own age, and also evaluate those (youngest) counselors the highest. Thus, it was an unexpected finding that counselees (particularly the youngest ones) evaluated the 32-34 age counselor group higher than the 21-31 age group. Whatever reason might account for this result, the data do identify the counselor age group which the youngest counselees (i.e., those probably most in need of counseling and most responsive to good counseling) evaluated as most effective (on criterion Item 8--see Tables 7 and 8, and Figure 5).

The finding that the low BTB counselees evaluated counselors as more helpful than did the high BTB counselees (see Figure 4) could be considered an expected and desirable result, if it is assumed that the low BTB counselees are more in need of (or would benefit more from) the help than would the high BTB counselees.

Usefulness of Obtained Validities

The usefulness of the cross-validities that held up at an acceptable level of significance (e.g., $p \leq .05$) may be demonstrated by application of the Taylor-Russell (1939) tables for various selection ratios (see Table 12). For example, if the applicant pool for the Navy counselor rating contains enough petty officers to apply a 50 percent selection ratio, use of the BAI and ICAC keys as a two-factor selection measure would increase the percentage of superior counselors selected from 50 to 63 percent--a proportionate improvement of 26 percent. Even with the use of a standard scale with a relatively low validity, .22 for the CPS Activity scale, and a requirement to accept most applicants, 70 percent, some improvement can be achieved--from 50 to 54 percent, for an 8 percent proportionate improvement.

The individual expectancy chart in Figure 5 was empirically derived from the distribution of CPS scores of the cross-validation sample. The base rate of 58 percent (see Table 9--CPS high criterion group N = 41) represents the proportion of Navy counselors found presently superior (for this cross-validation sample) without the use of the CPS as a selection device. Specific small samples are, of course, subject to sampling errors. Thus, the probabilities for the five-score intervals in Figure 6 do not present a constant progression of probabilities from the lowest to the highest score intervals. To reduce

the effect of sampling error, Lawshe et al. (1958) developed tables to construct theoretical expectancy charts. Figure 7 was constructed by interpolating the Lawshe et al. tablular data for a base rate of 58 and r = .34--the parameters for the results of the cross-validation of the CPS-constructed key. With the use of this chart, an applicant who scored in the second highest score interval would have a probability of 66 percent of performing as a superior counselor--thus eight percentage points above the base rate.

It is encouraging that some of the cross-validities did hold up to a level that permits useful applications, since the distribution of counselee responses on the criterion items indicated that most counselors were doing a good job (see Table 3). Thus, the criterion variance is hardly between good and poor counselors, but rather, between superior and good counselors. The validities obtained may justify the substantial, additional effort that was directed towards acquisition of criterion data directly from the recipients of the services--the counselees (as distinguished from the usual resort to acquisition of supervisory evaluations)--and using multiple raters per ratee.

Although the keys were constructed for the selection of career counselors, they may be useful also for selection to other occupations, such as Recruiter, which involve substantial amounts of counseling activities. No other selection instruments known to the authors exist that were empirically validated on evaluations acquired directly from the recipients of the counseling services--the counselee or the recruit.

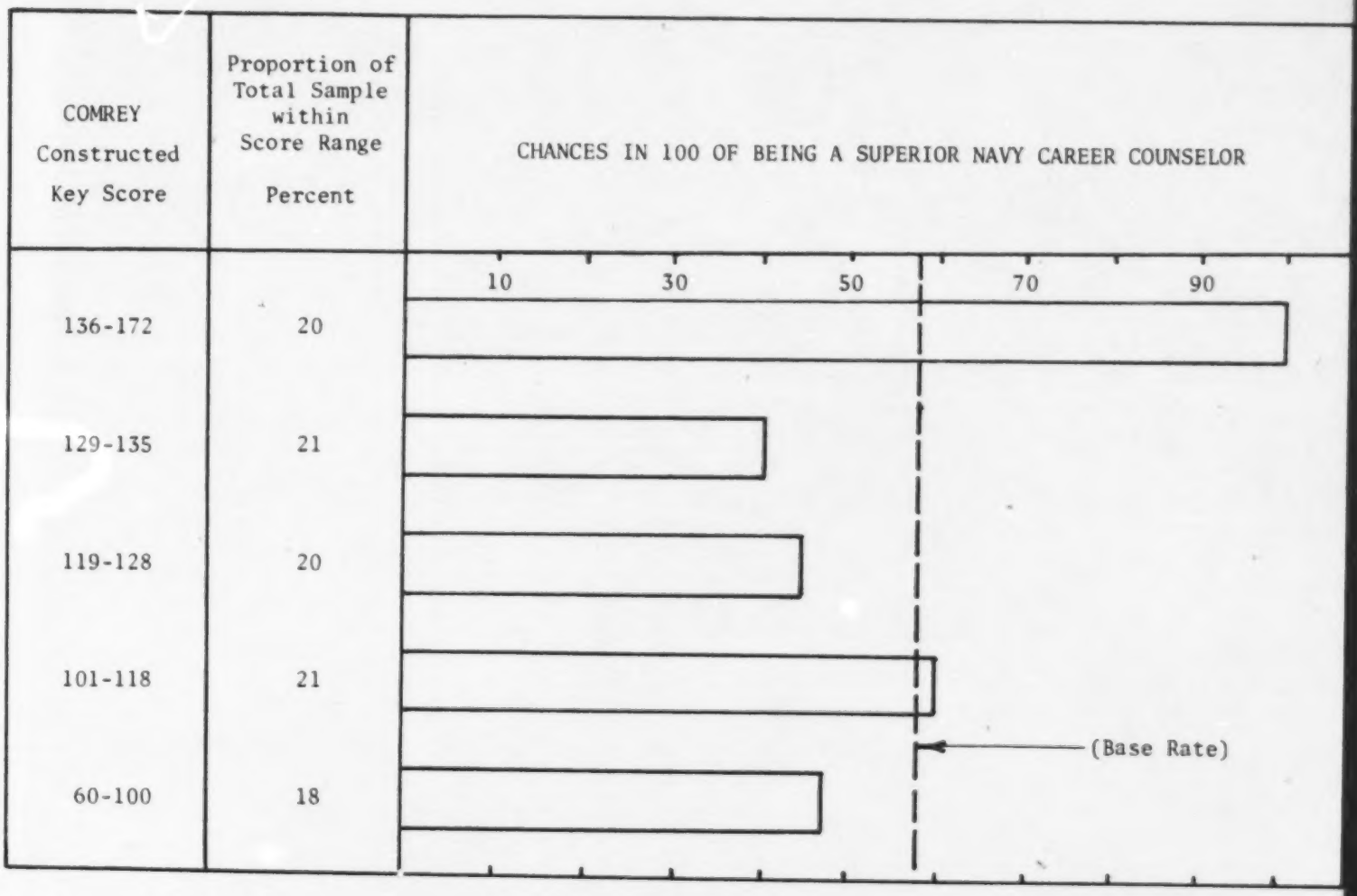

Figure 6. Empirical individual expectancy chart derived from the constructed COMREY Personality Scale Key of the cross-validation sample.

Table 12

Improvement in Navy Counselor Performance from Application of Counselor Selection Instruments

Instrument and Scale	Type Key[a]	Cross-Validity	Selection Ratio	Percentage of Identified Superior Counselors Improved[b]			
						Increase	
				From[c]	To	Absolute	Proportionate
CPS-Activity	Std	.22	30	50	59	9	18
			50	50	56	6	12
			70	50	54	4	8
CPS-Navy Counselor	Con	.34	30	58	73	15	26
			50	58	69	11	19
			70	58	65	7	12
Multiple BAI and ICAC-Navy Counselor	Con	.41	30	50	69	19	38
			50	50	63	13	26
			70	50	58	8	16

[a]Std--Standard Con--Constructed.

[b]Based on Taylor-Russell (1939) tables, employing the tabled r nearest to the obtained cross-validation r (e.g., for CPS-Activity r = .22, tabled r = .20 was used).

[c]Based on proportionate size of the high criterion subgroup used for cross-validation (see Tables 9 and 10).

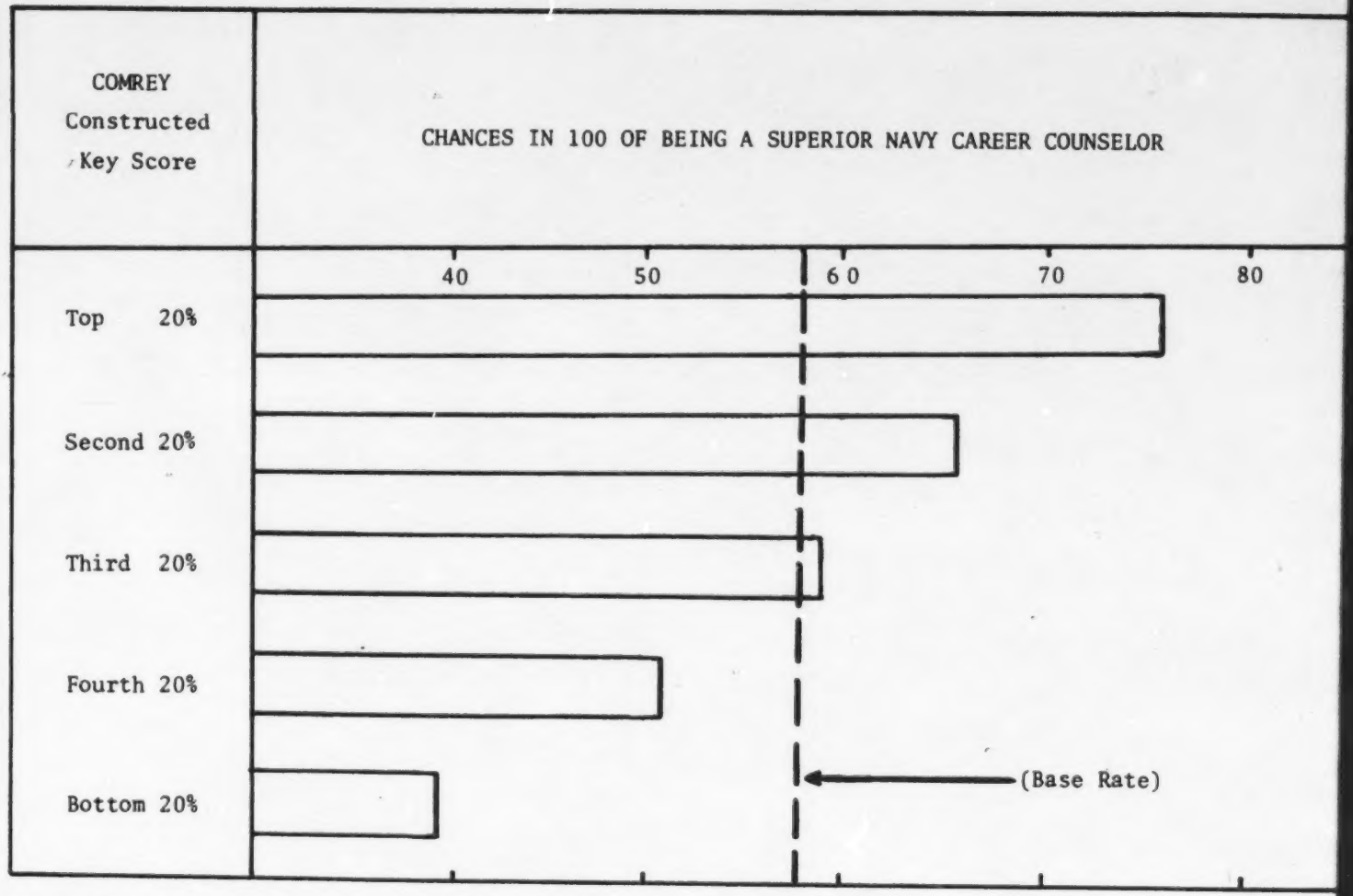

Figure 7. Theoretical individual expectancy chart derived from the constructed COMREY Personality Scale Key of the cross-validation sample, applying the Lawshe et al. (1958) tables.

CONCLUSIONS

1. For the empirical construction of keys for counselor selection instruments, it is feasible and most appropriate to acquire the criterion data directly from the recipient of the counseling services--from the counselee.

2. Although present, nonquantitative selection procedures produce counselors who provide services that counselees generally evaluate favorably, the addition of noncognitive instruments to the selection procedure would yield an increased percentage of superior counselors selected.

3. The best single and multiple selectors (and their cross-validities) were the constructed keys for the Comrey Personality Scales (CPS) ($\underline{r}$ = .34) and, as multiple weighted factors, the Biographical Attitudinal Inventory (BAI) and Ideal Counselor Adjective Check List (ICAC) ($\underline{r}$ = .41). Although either of the two selectors would be useful, a choice at this time of only one of them would be premature, since the size of the cross-validation sample was small--for the CPS, about double that of the BAI-ICAC composite. Thus, the obtained significance level for the CPS, $\underline{p} \leq .006$, indicates the greater confidence in use of the CPS, even though the cross-validity of BAI-ICAC was the greater.

RECOMMENDATIONS

It is recommended that:

1. The CPS be used as a selector for career counselors.

2. The BAI and ICAC be administered but not used as multiple selectors, and that all three instruments be revalidated after acquisition of additional data to provide for increased sample size.

3. The usefulness of the three instruments for other jobs involving counseling activities be investigated.

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